ABSTRACT OF THE DISCLOSURE

Novel chimeric fusion proteins comprising immunodominant epitopes of GAD and insulin are provided. Also provided are immunomodulatory methods for the use of such proteins for both the prevention and treatment of Type 1 diabetes mellitus. The chimeric fusion proteins of the invention are useful in predicting risk of onset of Type 1 diabetes, determining prognosis of Type 1 diabetes patients early in disease progression, and in evaluating patients for suitability as recipients of transplants of pancreatic cells or tissues. The administration of the proteins of the invention in accordance with the immunomodulatory methods of the invention results in beneficial effects on disease development and severity in patients suffering from or predicted to be at risk of developing Type 1 diabetes, as well as on the outcome of transplants of pancreatic cells or tissues in Type 1 diabetes patients.